

Having described the invention, we claim:

1. A cannula for receiving surgical instruments for performing a surgical procedure on a body, said cannula comprising:

a tube structure defining a passage through which the surgical instruments are inserted into the body, said tube structure having a proximal end and a distal end,

said tube structure including an expandable portion for enabling an increase in the cross-sectional area of said passage at said distal end.

2. The cannula of claim 1 wherein said expandable portion of said tube structure, when expanded, has a conical configuration.

3. The cannula of claim 1 wherein said expandable portion of said tube structure has an arcuate slot and a guide pin disposed in said arcuate slot, said guide pin being movable from a terminal end of said slot to a second terminal end of said slot to enable the cross-sectional area of said passage at said distal end to increase.

3 ¹/₁. The cannula of claim 1 wherein said tube structure is made of metal.

4 ¹/₁. The cannula of claim 1 wherein said expandable portion is expandable from a contracted condition to an expanded condition to increase the cross-sectional area of said passage at said distal end of said tube structure.

5 ⁴/₁. The cannula of claim 1 further comprising means for maintaining said expandable portion in said contracted condition, said means being manually actuatable to release said expandable portion for expansion from said contracted condition.

6 ⁴/₁. The cannula of claim 1 further comprising means for expanding said expandable portion from said contracted condition to said expanded condition, said means being insertable into said passage and actuatable to apply a radially outwardly directed force to expand said expandable portion.

7 ¹/₁. The cannula of claim 1 wherein said tube structure includes first and second tubular portions

attached to one another, said second tubular portion comprising said expandable portion.

9. The cannula of claim 8 wherein said first tubular portion comprises a length of stainless steel tubing and said second tubular portion comprises an arcuate segment of stainless steel sheet stock rolled into a tubular shape.

~~10.~~ A cannula for receiving surgical instruments, said cannula comprising:

a first tubular portion defining a first passage for receiving the surgical instruments, said first passage having a first diameter, said first tubular portion having a proximal end and a distal end; and

a second tubular portion attached to said distal end of said first tubular portion and defining a second passage for receiving the surgical instruments, said second passage being a continuation of said first passage,

said second tubular portion being diametrically expandable to enable enlargement of said

16

second passage to a size which is greater than said first diameter of said first passage.

9
11. The cannula of claim 10 wherein said second tubular portion has oppositely disposed first and second ends, said first end being attached to said distal end of said first tubular portion.

10
12. The cannula of claim 11 wherein said second passage at said second end of said second tubular portion, when said second tubular portion is expanded, has a second diameter which is greater than said first diameter of said first passage in said first tubular portion.

13. The cannula of claim 12 wherein said second diameter of said second passage at said second end of said second tubular portion, when said second tubular portion is expanded, is 40% to 80% larger than said first diameter of said first passage.

11
14. The cannula of claim 10 wherein said second passage, when said second tubular portion is expanded, has a conical configuration.

15. The cannula of claim 10 wherein said second tubular portion has an arcuate slot and a guide pin disposed in said arcuate slot, said guide pin being movable from a first terminal end of said arcuate slot to a second terminal end of said arcuate slot to enable said second tubular portion to expand diametrically.

21
16. The cannula of claim 15 wherein said second tubular portion has first and second ends connected by a central portion, said first end being attached to said distal end of said first tubular portion, said arcuate slot extending circumferentially from said central portion toward said second end.

12
17. The cannula of claim 10 wherein said first and second tubular portions are made of metal.

13
18. The cannula of claim 17 wherein said first tubular portion comprises a length of stainless steel tubing.

19. The cannula of claim 17 wherein said second tubular portion comprises an arcuate segment of stainless steel sheet stock.

14
20.

8
30

The cannula of claim ~~10~~ wherein said second tubular portion is expandable from a contracted condition to an expanded condition to enable enlargement of said second passage.

15
21.

14
20

The cannula of claim ~~20~~ further comprising means for maintaining said second tubular portion in said contracted condition, said means being manually actuatable to release said second tubular portion for expansion from said contracted condition.

16
22.

14
20

The cannula of claim ~~20~~ further comprising means for expanding said second tubular portion from said contracted condition to said expanded condition, said means being insertable into said first passage and actuatable to apply a radially outwardly directed force to expand said second passage.

ADD
A17

ADD
A27

ADD
B17 19